

I Claim:

1. A method of constructing a segmented wound member of an N phase electromechanical device, comprising:

- (A) winding N sets of segments, the N sets of segments being wound with a single continuous length of wire for each set; and
- (B) combining the N sets of segments in a common circular arrangement to form the wound member; and

wherein each of the N sets of segments is wound separately from the remaining sets of segments and then combined in the common circular arrangement with the remaining sets of segments to form the wound member.

2. A method according to claim 1, wherein the winding step includes

- (1) arranging a plurality of segments in a side-by-side orientation along an axis of rotation, the plurality of segments forming one of the N sets of segments;
- (2) rotating the plurality of segments and a wire dispenser relative to each other about the axis of rotation;
- (3) winding the plurality of segments during the relative rotation of the plurality of segments and the wire dispenser; and
- (4) repeating the arranging, rotating and winding steps for each of the remaining sets of segments.

3. A method according to claim 1, wherein the winding step includes
- (1) arranging a plurality of segments in a circular arrangement with spaces therebetween, the plurality of segments forming one of the N sets of segments; then
  - (2) winding the plurality of segments; then
  - (3) repeating the arranging and winding steps for each of the remaining sets of segments.

4. A method of winding segments of a segmented wound member of an electromechanical device, comprising:

- (A) arranging a plurality of segments in a side-by-side orientation along an axis of rotation;
- (B) rotating the plurality of segments and a wire dispenser relative to each other about the axis of rotation; and
- (C) winding the plurality of segments during the relative rotation of the plurality of segments and the wire dispenser.

5. A method according to claim 4 wherein, during the winding step, the segments are wound with a single continuous length of wire.

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6. A method according to claim 4,  
wherein the arranging, rotating, and winding steps are performed N times, N being equal to the number of phases of the electromechanical device,  
wherein a total of N sets of M segments are wound for the electromechanical device, M being determined by the number of poles of the electromechanical device and being equal to the number of segments that are arranged, rotated, and wound during each performance of the arranging, rotating and winding steps.

A method according to claim 4, wherein the plurality of segments rotate relative to the wire dispenser, the wire dispenser being substantially stationary during at least a portion of the winding step.

8. A method according to claim 4, further comprising moving the wire dispenser along an axis that is parallel to the axis of rotation.

9. A wound member for an electromechanical device comprising segments wound according to the method of claim 4.

10. A winding fixture for winding segments of a segmented wound member of an electromechanical device, the winding fixture comprising:

(A) a motor;

(B) a rotatable clamp, the rotatable clamp having an axis of rotation, the rotatable clamp being mechanically coupled to the motor, the rotatable clamp being capable of being driven by the motor to rotate about the axis of rotation during a winding operation, the rotatable clamp having first and second end sections that are spaced from each other along the axis of rotation, the first and second end sections being capable of clamping together a plurality of segments in a manner such that the plurality of segments are arranged in a side-by-side orientation along the axis of rotation and such that the plurality of segments rotate about the axis of rotation during the winding operation;

(C) a wire dispenser, the wire dispenser being movable in a direction parallel to the axis of rotation to various positions adjacent the plurality of segments, the wire dispenser being capable of dispensing wire to each of the plurality of segments by moving from position to position and dispensing wire as the rotatable clamp and the plurality of segments rotate during the winding operation.

11. A winding fixture according to claim 10, wherein the rotatable clamp includes a plurality of nests, the nests being capable of being disposed in alternating fashion between the segments.

12. A winding fixture according to claim 10, wherein the wire dispenser is capable of winding the plurality of segments with a single continuous length of wire.

13. A winding fixture according to claim 10, wherein the wire dispenser is movable only in the direction of the axis of rotation.

14. A method of winding segments of a segmented wound member of an electromechanical device, comprising:

- (A) arranging a first plurality of segments in a first circular arrangement, the first plurality of segments being arranged with a first plurality of spaces between respective ones of the first plurality of segments; then
- (B) winding the first plurality of segments;
- (C) arranging a second plurality of segments in a second circular arrangement, the second plurality of segments being arranged with a second plurality of spaces between respective ones of the second plurality of segments; then
- (D) winding the second plurality of segments; and then
- (E) assembling the segmented wound member, including combining the first circular arrangement with the second arrangement such that the first plurality of segments and the second plurality of segments are disposed in a common circular arrangement, with the first plurality of segments fitting within the second plurality of spaces and the second plurality of segments fitting within the first plurality of spaces.

15. A method according to claim 14, wherein the arranging step (A) is performed using a ring clamp having a plurality of spacers, the ring clamp clamping the first plurality of segments in the first circular arrangement with the plurality of spacers filling the first plurality of spaces between the first plurality of segments.

16. A method according to claim 14 wherein the winding step (B) is performed using a bobbin winder that is disposed substantially at the center of the first circular arrangement during the winding step.

17. An electromechanical device having a wound member comprising segments wound according to the method of claim 14.

18. A method according to claim 14, wherein a total of N pluralities of segments are arranged and wound, N being equal to the number of phases of the electromechanical device and being equal to or greater than two.

19. A method of winding segments of a segmented wound member of an electromechanical device, comprising:

- (A) arranging a first plurality of segments in a circular arrangement with spaces therebetween; then
- (B) winding the first plurality of segments; then

- (C) repeating the arranging and winding steps such that N pluralities of segments are arranged and wound, N being equal to the number of phases of the electromechanical device and being equal to or greater than two; then
- (D) assembling the segmented wound member, including combining the pluralities of segments arranged and wound during the arranging, winding and repeating steps in a common circular arrangement.

20. A method according to claim 19, wherein the segments for each phase are wound with one continuous length of wire.

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